

- 52 -

WHAT IS CLAIMED IS:

1. An intelligent network for use with an ATM network to set up an ATM switched virtual circuit to provide VToA services and alias addressing, the intelligent network comprising:

a multi-service control point operable to receive an input extracted from an input ATM setup message that includes a called party phone number value and a VToA designator, generate an alias ATM address of a called party CPE that corresponds to a network gateway in communication with a PSTN switch through a plurality of trunk lines and a desired trunk line of the plurality of trunk lines, and generate an output in response for use in generating an output ATM setup message;

an ATM signaling intercept processor operable to intercept the input ATM setup message from an ingress ATM edge switch of the ATM network, extract the input from the input ATM setup message, communicate the input to the multi-service control point, receive the output generated by the multi-service control point, generate the output ATM setup message using the output that includes the alias ATM address, and communicate the output ATM setup message to the ingress ATM edge switch of the ATM network; and

a service administration operable to provision the multi-service control point and the ATM signaling intercept processor.

2. The intelligent network of Claim 1, wherein the input includes a calling party phone number value.

- 53 -

3. The intelligent network of Claim 2, wherein the input includes an ATM address of the calling party CPE.

5 4. The intelligent network of Claim 3, wherein the called party phone number value is stored in a called party subaddress parameter of the input ATM setup message, the VToA designator is stored in a called party number parameter of the input ATM setup message, the calling party phone number value is stored in a calling party subaddress parameter of the input ATM setup message, and the ATM address of the calling party CPE is stored in a calling party number parameter of the input ATM setup message.

10 5. The intelligent network of Claim 1, wherein the called party phone number value is stored in the called party subaddress parameter of the input ATM setup message, the VToA designator is stored in the called party number parameter of the input ATM setup message.

15 6. The intelligent network of Claim 1, wherein the output includes the alias ATM address of the called party CPE that corresponds to the network gateway and a desired trunk line of the plurality of trunk lines.

20

- 54 -

7. The intelligent network of Claim 6, wherein the called party phone number value is stored in the called party subaddress parameter of the output ATM setup message, the alias ATM address of the called party CPE that corresponds to the network gateway and a desired trunk line of the plurality of trunk lines is stored in the called party number parameter of the output ATM setup message, the calling party phone number value is stored in the calling party subaddress parameter of the output ATM setup message, and the ATM address of the calling party CPE is stored in the calling party number parameter of the output ATM setup message.

8. The intelligent network of Claim 1, wherein the multi-service control point determines if the input ATM setup message requests an SVC for VToA by analyzing the VToA designator portion of the input.

9. The intelligent network of Claim 1, wherein the multi-service control point is operable to receive an input extracted from an input ATM release message and to generate an output in response for use in generating an output ATM release message, and wherein the ATM signaling intercept processor operable to intercept the input ATM release message from an ingress ATM edge switch of the ATM network, to extract the input from the input ATM release message, to communicate the input to the multi-service control point, to receive the output generated by the multi-service control point, to generate the output ATM release message using the output, and communicate the output ATM signaling message to the ingress ATM edge switch of the ATM network.

- 55 -

10. The intelligent network of Claim 1, wherein the ATM edge switch receives the input ATM setup message from an enterprise gateway.

5 11. The intelligent network of Claim 1, wherein the multi-service control point is operable to determine if the called party phone number value is valid, and wherein the input ATM setup message is rejected if the called party phone number value is not valid.

10 12. The intelligent network of Claim 1, further comprising:

15 a second multi-service control point operable to receive an egress input extracted from the output ATM setup message that includes the called party phone number value, and generate an egress output in response,

20 a second ATM signaling intercept processor operable to intercept the output ATM setup message from an egress ATM edge switch of the ATM network, extract the egress input from the output ATM setup message, communicate the egress input to the second multi-service control point, receive the egress output generated by the multi-service control point, generate an ATM setup message using the egress output, and communicate the ATM
25 setup message to the egress ATM edge switch of the ATM network, and wherein the service administration is operable to provision the second multi-service control point and the second ATM signaling intercept processor.

30 13. The intelligent network of Claim 11, wherein the second multi-service control point is the multi-service control point are the same multi-service control point.

- 56 -

14. An ATM telecommunications network with an intelligent network for providing VToA services and alias addressing using an ATM switched virtual circuit, the ATM telecommunications network comprising:

5 an ingress CPE operable to generate an input ATM setup message;

 an egress CPE in communication with a PSTN switch through a plurality of trunk lines, the egress CPE operable to receive an ATM setup message and to select one of the plurality of trunk lines based on the ATM setup message to use to communicate with the PSTN switch;

10 an ATM network operable to communicate ATM cells and ATM messages;

 an ingress ATM edge switch in communication with the ATM network and the ingress CPE, the ingress ATM edge switch operable to receive the input ATM setup message from the ingress CPE and to communicate an output ATM setup message to the ATM network;

15 an egress ATM edge switch in communication with the ATM network and the egress CPE, the egress ATM edge switch operable to receive the output ATM setup message from the ATM network and to communicate an ATM setup message to the egress CPE;

 an intelligent network that includes:

25 a multi-service control point operable to receive the input extracted from the input ATM setup message that includes a called party phone number value and a VToA designator, generate an alias ATM address of a called party CPE that corresponds to a network gateway in communication with a PSTN switch through a plurality of trunk lines and a desired trunk line of the plurality of trunk lines, and generate an output that includes the

30

- 57 -

alias ATM address in response for use in generating an output ATM setup message,

an ATM signaling intercept processor operable to intercept the input ATM setup message from the ingress ATM edge switch, extract the input from the input ATM setup message, communicate the input to the multi-service control point, receive the output generated by the multi-service control point, generate the output ATM setup message using the output, and communicate the output ATM setup message to the ingress ATM edge switch of the ATM network,

a second multi-service control point operable to receive an egress input extracted from the output ATM setup message that includes the called party phone number value, and generate an egress output in response,

a second ATM signaling intercept processor operable to intercept the output ATM setup message from the egress ATM edge switch of the ATM network, extract the egress input from the output ATM setup message, communicate the egress input to the second multi-service control point, receive the egress output generated by the multi-service control point, generate an ATM setup message using the output, and communicate the ATM setup message to the egress ATM edge switch of the ATM network,

a service administration operable to provision the multi-service control point, the ATM signaling intercept processor, the second multi-service control point and the second ATM signaling intercept processor.

- 58 -

15. The ATM telecommunications network of Claim 14, wherein the input includes a calling party phone number value and an ATM address of the calling party CP, and wherein the called party phone number value is stored in a called party subaddress parameter of the input ATM setup message, the VToA designator is stored in a called party number parameter of the input ATM setup message, the calling party phone number value is stored in a calling party subaddress parameter of the input ATM setup message, and the ATM address of the calling party CPE is stored in a calling party number parameter of the input ATM setup message.

16. The ATM telecommunications network of Claim 15, wherein the called party phone number value is stored in a called party subaddress parameter of the output ATM setup message, the alias ATM address of the called party CPE that corresponds to the network gateway and a desired trunk line of the plurality of trunk lines is stored in a called party number parameter of the output ATM setup message, the calling party phone number value is stored in a calling party subaddress parameter of the output ATM setup message, and the ATM address of the calling party CPE is stored in a calling party number parameter of the output ATM setup message.

- 59 -

17. A method for providing VToA and alias addressing using an intelligent network and a switched virtual circuit over an ATM network, the method comprising:

- 5 intercepting an input ATM setup message from an ingress ATM edge switch of the ATM network;
- extracting information from the input ATM setup message;
- analyzing the information to determine if the input
- 10 ATM setup message is a request to set up an SVC for VToA;
- generating an alias ATM address of a called party CPE that corresponds to a network gateway in communication with a PSTN switch through a plurality of trunk lines and a designated trunk line of the plurality
- 15 of trunk lines;
- generating an output ATM setup message that includes the alias ATM address of the called party CPE that corresponds to the network gateway and a designated trunk
- line of the plurality of trunk lines; and
- 20 communicating the output ATM setup message to the ingress ATM edge switch of the ATM network.

25 18. The method of Claim 17, wherein analyzing the information to determine if the input ATM setup message is a request to set up an SVC for VToA further includes processing the information to provide VToA services.

30 19. The method of Claim 17, wherein generating an alias ATM address includes using a called party number of the information extracted from the input ATM setup message.

- 61 -

21. A method for providing VToA and alias addressing using an intelligent network and a switched virtual circuit over an ATM network, the method comprising:

5 receiving a request at an ingress CPE to make a VToA call that includes a called party phone number value;

generating an input ATM setup message at the CPE that includes the called party phone number and a VToA designator stored in a designated parameter of the input
10 ATM setup message;

receiving the input ATM setup message at a device side of an ingress ATM edge switch of the ATM network;

intercepting the input ATM setup message from the device side of the ingress ATM edge switch of the ATM
15 network;

extracting information from the input ATM setup message that includes the VToA designator and the called party phone number;

analyzing the information to determine if the VToA
20 designator is present;

generating an alias ATM address of a called party CPE that corresponds to a network gateway in communication with a PSTN switch through a plurality of trunk lines and a designated trunk line of the plurality
25 of trunk lines using the called party phone number;

generating an output ATM setup message that includes the alias ATM address of the called party CPE that corresponds to the network gateway and the designated trunk line of the plurality of trunk lines and the called
30 party phone number;

communicating the output ATM setup message to a network side of the ingress ATM edge switch of the ATM network;

- 62 -

receiving the output ATM setup message at a network side of an egress ATM edge switch;

intercepting the output ATM setup message from the network side of the egress ATM edge switch of the ATM network;

extracting egress information from the output ATM setup message that includes the alias ATM address of the called party CPE that corresponds to the network gateway and a desired trunk line of the plurality of trunk lines; communicating the output ATM setup message to a device side of the egress ATM edge switch; and communicating the output ATM setup message to the called party CPE.

22. The method of Claim 21, wherein generating an input ATM setup message at the CPE includes storing the VToA designator in the called party address parameter and storing the called party phone number value in the called party subaddress parameter.

23. The method of Claim 21, wherein generating an output ATM setup message includes storing the alias ATM address of the called party CPE that corresponds to the network gateway and the designated trunk line of the plurality of trunk lines in the called party address parameter and storing the called party phone number value stored in the called party subaddress.

24. The method of Claim 21, further comprising: processing the information to provide VToA services after analyzing the information to determine if the VToA designator is present.

- 63 -

INTELLIGENT NETWORK AND METHOD FOR PROVIDING
VOICE TELEPHONY OVER ATM AND ALIAS ADDRESSING

25. The method of Claim 21, wherein generating an alias ATM address includes using the called party number and the calling party number of the information extracted from the input ATM setup message.

26. The method of Claim 21, further comprising:
selecting one of the plurality of trunk lines at the called party CPE to establish communications between the network gateway and the PSTN switch based on the alias ATM address.